

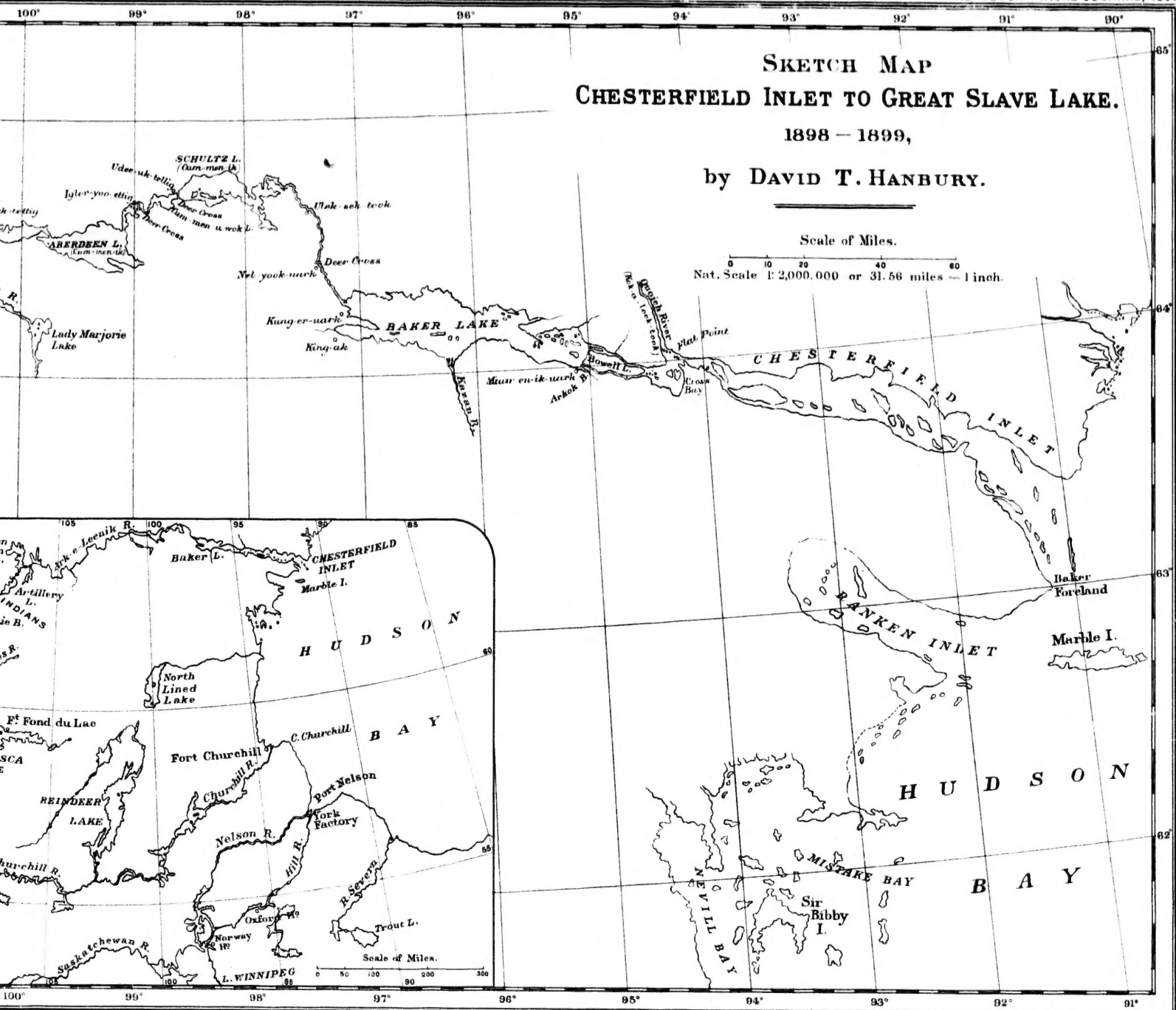
SKETCH MAP CHESTERFIELD INLET TO GREAT SLAVE LAKE.

1898 - 1899,

by DAVID T. HANBURY.

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A JOURNEY FROM CHESTERFIELD INLET TO GREAT SLAVE LAKE, 1898-9.*

By DAVID T. HANBURY.

WITH the object in view of crossing and exploring that portion of the Barren Northland of Canada which lies between the head of Chesterfield inlet and Great Slave lake, I left Winnipeg by first open water in the early part of May, 1898. The starting-point for this journey was Fort Churchill, on the west coast of Hudson bay, which was reached on July 6, after an easy canoe journey *via* Norway House, Oxford House, and York Factory. To my disgust, and very much to my surprise, I now learnt that it would not be possible to start north by open water until July 20, the earliest date, in average years, when navigation opens on Hudson bay. Two Cree lads, whom I had engaged at Oxford House to accompany me on the journey, and who had gone through the farce of signing contracts to remain in my service faithfully for the period of one year, now pleaded sickness as an excuse for wishing to return to their homes. The whole way along, I knew very well that by every one we met they had been dissuaded from undertaking the journey. Pictures of hordes of cannibal Eskimo devouring raw human flesh had been placed vividly before their imaginations by other Indians, one and all of whom have a dread of approaching "Husky" or Eskimo land. The lads were finally so overcome with horror and dismay at the mere prospect of getting anywhere near such terrible savages as the Eskimo, that I fancy they really were sick from sheer fright. Anyway, men in this condition would be of little service to me. The contract was off, and they returned in a hurry to their people at Oxford House. The Hudson Bay trading boat was to start north for Marble island about July 20. An average trip would take ten days. This would have landed me within 60 miles of the entrance to Chesterfield inlet about August 1—too late in the season, in my judgment, to commence a long journey into an altogether unexplored country. After due consideration, I decided to postpone the journey, and content myself with taking up the canoe, and leaving it in cache near Marble island till the following spring, for I intended to leave Churchill in the spring, and haul up as far as possible on the ice with dogs and sleighs.

The short summer was passed in taking a run up in the Company's trading boat, caching the canoe near Marble island, and in learning as much about the Eskimo—their language and the country to the north—as my time permitted. At the same time I managed to secure from them two trains of fine Eskimo dogs, as it now became necessary for me to take the winter trip to Winnipeg in order to refit and complete my outfit. Before leaving, arrangements were made for Eskimo (or

* Map, p. 140.

Huskies, as I shall in future call them) to meet me at Churchill in the following spring. Two sleighs were also ordered to be made, and other outfit got ready by the time I expected to be back, and on September 5 I bade farewell to Churchill for the winter, no one, I knew very well, expecting to see me return. That concerned me not at all, so long as they got everything in readiness for the projected journey. From Churchill to York the distance is 180 miles, very much more easily accomplished by land than by water.

A delay of six weeks occurred at York, waiting for the "freeze-up," during which time, as soon as the snow fell, I broke in my dogs—several of them never having been hitched up in harness before. On November 8 Hayes river was frozen solid, and as a large amount of snow had fallen, by the advice of my guide, a start was made for Oxford House *en route* to Winnipeg. Travelling in the early winter on the first snows is never good. However, Winnipeg was reached in about a month, delays having been made at Oxford House and Norway House in order to rest the dogs. The distance from York Factory to Winnipeg is something under 800 miles. The latter part of December, January, and most of February was passed in civilization. A fresh outfit, ordered from England, had duly arrived, and was awaiting me, and two reliable Red river half-breeds were engaged for the journey.

Shortly before my departure, when everything was in readiness, I happened to be one of the unfortunate guests at the Manitoba hotel, which was completely destroyed by fire one night in the early part of February. I was fortunate enough, however, to save my instruments, cameras, rifles, guns, etc.—in fact, everything which was necessary for the trip, and only my clothes went up in smoke.

On February 26 a final start was made from Selkirk. Horses and sleigh were used as far as Berens river (about halfway up Lake Winnipeg), where my dogs and drivers met me. A few days' delay at Norway House, Oxford House, and a week at York Factory to rest my dogs, and I appeared once more on the scene at Churchill—the first week in April. The spring was luckily a very late one, so there was no immediate necessity for hurrying away from Churchill, which was the last place where supplies could be obtained. A short distance north from Churchill the barren land commences, and no fuel can be got. The weather continued very cold, the thermometer frequently registering from -10° to -15° Fahr. The Eskimo, or Husky, who had so faithfully promised to return and meet me, had as yet shown no signs of putting in an appearance. Five weeks were passed at Churchill, the monotony of the life being broken by the occasional arrival of Huskies with loads of venison. A few Chipewyan Indians turned up, relating miserable stories of starvation during the winter months. The Huskies brought welcome news about the deer (caribou), which were reported to be very numerous all along the coast. I may

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here mention that the success of the whole journey, not my own particular one, but any expedition into the Barren North land, depends entirely on the presence of deer in sufficient numbers along the route.

The season had now arrived for us to move on, if we wished to have good ice to travel on as far as Chesterfield inlet. The Husky not having turned up, I engaged another Husky in his place—"Milook," who agreed to accompany me as far as I wished, and who was capable of acting as guide as far as Marble island. We left Churchill on May 12 with two sleighs, twelve dogs, and four men, including the writer, all told. I took the precaution to haul a canoe along—for in the event of the polar bears having demolished the one left in cache near Marble island—not an unlikely contingency—we should have been placed in a decidedly awkward situation, being unable to return on the ice, and having no craft in which to proceed by water. Several nights' dried meat were taken for ourselves and the dogs, by which time we hoped to be amongst the caribou, or deer, as they are more commonly styled. A large supply of tea and tobacco, and such articles for trading with the natives met with *en route*, as knives, files, beads, thimbles, needles, awls, etc., were included in our outfit. Supplies, such as flour, bacon, sugar, etc., were dispensed with altogether. We were to depend henceforth on our rifles, guns, and nets to supply us with food.

Marble island was reached on June 5, and here we found the canoe intact, just as it had been left the summer before, so the spare canoe was quickly broken up to supply some much-needed fuel. Travelling on the ice along the coast had on the whole been very good, and our progress, though slow, had been steady. Deer had been very scarce, and the dogs had starved several nights. The deer, which the Huskies had reported as being so plentiful a few days north of Churchill, had all moved away inland, and only their tracks remained when we passed.

Many times did I deplore the folly of leaving Churchill with such a small quantity of dried meat. At one time it looked very much like having to beat a retreat back to Churchill, hauling our stuff on hand-sleighs. Fortunately, a few deer were met with and killed, just in time to save us from such an ignominious course. I should hardly have dared to have shown my face back at Churchill, forced to turn back for a second time.

We had a great friend in the weather, which, with the exception of one blizzard, had been absolutely perfect—clear, bright, and cold. Those who know the climate of the Hudson bay may well be surprised. Such a long spell of glorious weather as we experienced the whole way up to Chesterfield inlet, and again up the inlet itself, has rarely been heard of before. As far as Marble island, the ice had not shown the slightest sign of breaking up, and the surface of it was as dry as in mid-winter. I thought several times of my two Cree lads from Oxford House. If they had been along now, it would not have been possible

for them to have turned tail. There was no retreat now, for by this time the rivers to the south would be breaking up. We were burning the bridges behind us, so to speak.

The entrance to Chesterfield inlet was reached on June 8. The ice was still good to travel on, though the sun's power was commencing to show its effect, and numerous pools of water which lay on the ice had to be avoided if possible, otherwise splashed through. The weather continued perfect. It was hardly possible to believe that we were on the Hudson bay, a worse climate than which it would be difficult to find. Deer were shot as we wanted them, though at times they were not so plentiful as might have been wished. Still, there was no starvation either for ourselves or the dogs. Hunting delayed us a great deal, but large supplies of provisions would have delayed us very much more. In fact, it would not have been possible to have hauled up a sufficient supply of "outside stuff," *i.e.* flour, pork, sugar, etc., to have lasted the trip. As it was, my own and every available dog at Churchill had been requisitioned for the two sleighs. Obtaining a supply of meat would sometimes cause a delay of three days. Failing to sight deer on the first day would necessitate a second day being spent in hunting, and a third day was then required for hauling the meat. I used to shoot six or seven animals at the same spot, if possible. These would last us three days, when another halt would have to be called for hunting. Geese, ducks, ptarmigan, and other spring arrivals in the shape of small birds, hawks, loons, gulls, etc., began to appear at this time.

What at one time, in fact the whole way up, had caused me no little anxiety—*viz.* starvation on Chesterfield inlet while waiting for open water—now seemed very remote. The head of Chesterfield inlet was reached on June 21. During the latter part of the way up, travelling on the ice had become very bad. At one place the ice was so rough and hummocky, that the dogs' feet were cut to pieces, and I almost despaired of getting any further on the ice. By retracing our steps a long way, we managed to travel along the shore on the rafted ice, and so avoid the worst of the hummocky ice, which, when once we passed, gave us no further trouble; the ice became smooth again, and remained so until the head of the inlet was reached.

The last few days we had to travel in water the whole time, which was from 1 foot to 2 feet and over in depth, as it lay in large pools and small lakes on the ice. On several occasions some of the smaller dogs were actually swimming, and still trying to haul. The ice on the inlet was still 3 to 4 feet thick, but the snow, except in patches, had all disappeared from the Barren Ground. At the head of the inlet, some of the Baker Lake Huskies were met with. They appeared to be in a very starving condition, deer in the vicinity being very scarce, and they were without nets of any kind.

On June 23 a short portage was made over to Arkok, which is the

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Husky name for the deep bay of Baker lake which lies just to the south of Howell island and the outlet from Baker lake into Chesterfield inlet. The canoe was hauled over by the dogs on bare ground, but all the stuff had to be packed over on our backs, the Huskies lending a willing hand. Arkok, on Baker lake, was reached on June 27, and here we were delayed for several days waiting for open water. We were then able to launch the canoe and kyaks, and proceed along the narrow strip of water which had already opened between the ice and the shore. At Arkok our nets kept us well supplied with fresh-run salmon, which average in weight from three to ten pounds. Following the south shore of Baker lake, the mouth of the Kazan river was reached on July 12, and here another delay of five days was necessary, the ice ahead on the lake being compact and solid. I now wished to obtain a supply of dried meat to take along in case of emergency. Deer, although fairly plentiful, were very difficult to get near, owing to the plague of mosquitoes, which was now at its height. The animals never remained quiet for a single instant. I managed always to kill enough for our immediate use by some very long range shooting. The flesh of the deer at this time was far from being palatable, and it was hardly fit to eat, being streaked with blood and foam all through. The marrow—a former luxury—was now of the consistency of blood and water, the inevitable result of “fly-time,” the wretched beasts being kept on the dead run day and night.

Baker lake is some 60 miles in length east and west. The head of it was reached on July 19. More of the Baker lake Huskies were met with at the head of the lake, at a place called King-ak, which is a deep bay to the south of the river flowing into Baker lake from Schultz lake. These natives were delighted to see “kablunak,” or white people, again, and a present of tobacco completed their happiness. They willingly gave us assistance over the portage to the river, thus saving us going back a long distance and then round in order to reach the mouth of the river. Tracking the canoe and kyaks up the river for two days, Schultz lake was reached. Schultz lake and Aberdeen lake to the west of it are well known, and call for little notice. On Aberdeen lake, which is of considerable extent, we were delayed several days by head winds, and on one occasion were beset by ice, which even at this late date—July 31—had not all disappeared. However, by availing ourselves of every chance, and by travelling by night instead of by day, good progress was made. In the matter of light, the nights were now almost as clear as the days. Frequently I used to start to hunt deer at midnight.

At the head of Aberdeen lake deer were met with in large bands. They were now on their annual migration to the south. From now on, we never “hunted” deer—it was not necessary; they could have been shot with a pistol from the tent door; one could almost catch them. Fish—large trout, whitefish, a few salmon, arctic trout, and one or two other varieties—were taken by the nets in large quantities. In one night

a single short net took over 100 lbs. weight. This was indeed a land of plenty, flowing with fish, deer, and small game.

On August 3 the mouth of the Doobaunt river was reached and passed, and we entered the Ark-e-leenik river (the Thelewdezeth of Back), which flows in from the west and joins the Doobaunt river. Large quantities of driftwood were found on its banks, for this river (Ark-e-leenik) is well wooded further west. Hitherto we had depended on moss and small heaths to provide a fire for cooking purposes.

We had now entered the unexplored country. How far west the Ark-e-leenik river would take us, whether it was navigable or not for canoes, were problems which we had come to solve. There was no information to be obtained from the Eskimo, for none of them had ever ascended the river for any distance. So without guides and without supplies of any kind, we started into this unknown country, trusting to our rifles and nets to provide us with a living, and to the good fortune which up till now had come our way. The journey eventually turned out to be so absurdly easy, that I more than once regretted that it was so, for half the pleasure of exploration is derived from meeting and surmounting difficulties, *i.e.* providing, of course, they can be successfully surmounted without abandoning most of one's stuff on the way. The main Ark-e-Leenik river was explored for a distance of 182 miles, and the western branch of it was ascended for 117 miles. The divide between the waters of the Hudson bay and Great Slave lake and the Mackenzie river was crossed at an altitude of 1394 feet, a short distance beyond which we reached Clinton Colden lake, and our journey of exploration was safely accomplished. The Ark-e-Leenik is a fine large river about 300 yards wide, having an even steady current of from 4 to 5 miles an hour. For the entire distance of 182 miles which we followed the main river, there is not a sign of any rough water which could possibly be misinterpreted into the meaning of a rapid, and it is navigable for a steamer with considerable draught nearly the whole way. About 50 miles from its mouth, wood (spruce) of fair-size growth is to be found, and the woods then increase in size and extent until the river divides, the larger branch coming in from the south, the smaller—which we followed up—joining from the west. The western branch, which was ascended for a distance of 117 miles, has numerous small and some large lakes on its upper waters. This branch of the Ark-e-leenik, although not free from rapids and rough water, presented no difficulties worth mentioning; a few portages of a mile in length, one of 3 miles, and several smaller ones, and the large peculiar-shaped lake dotted in on most maps is reached.

We had long since left the limits of Huskyland, and were now (the upper waters of the western branch) well into the hunting-grounds of the Yellow Knives and Dog Ribs from Great Slave lake. Musk-ox were met with in large numbers on the main Ark-e-leenik river. There is a

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How far west the navigable or not for live. There was none of them had ever guides and without country, trusting to to the good fortune y eventually turned regretted that it was from meeting and survey can be successfully off on the way. The distance of 182 miles, and miles. The divide between Slave lake and the feet, a short distance and our journey of exploration is a fine large current of from 4 to 182 miles which we very rough water which of a rapid, and it is right nearly the whole (see) of fair-size growth and extent until the the south, the smaller. The western branch, is numerous small and h of the Ark-e-leenik, presented no difficulties length, one of 3 miles, shaped lake dotted in and, and were now (the the hunting-grounds of the lake. Musk-ox were the Ark-e-leenik river. There is a

stretch of country about 80 miles in extent into which no human being enters. The Eskimo do not hunt so far west; it is likewise too far distant for the Yellow Knives and Dog Ribs from Slave lake to enter. To penetrate this country in the dead of winter would be simply to court starvation. The deer have all departed, and to depend on finding musk-ox at the end of the journey would be risky indeed, for not enough meat could be hauled to see the party safely back through the barren and deserted country which would lay behind them. There still remains, I am happy to say, one spot in this Great Barren North land—which is sacred to the musk-ox—into which human beings dare not enter. Here the animals remain in their primeval state, their solitude undisturbed by the hated sound and sight of man. Long may they remain so. The musk-ox were quite tame, and exhibited no fear, only curiosity. I approached several herds within 30 yards, photographed them at my leisure, moving them round as I wished, and then retired, leaving them still stupidly staring at me in wonder and amazement. When deer were not procurable—and several times we seem to have run out of them altogether—a musk-ox was killed. Fish were plentiful all along the Ark-e-leenik; in fact, I never saw such a grand river for fish. The nets were rarely set, however, when meat was procurable, as it caused considerable delay in the morning, and the nets had to be dried. Moose are to be found on the main Ark-e-leenik, also black bears. On the western branch the woods decrease in size and extent as one ascends, until finally at the height of land there are none, and once more we had to fall back on moss and heaths for fuel. Deer were then very scarce, and the musk-ox we had long since left behind, but something always turned up to keep the pot boiling. One day it would be a wolverine, another time a fat wolf; all animals appear to be good on the Barren Lands, or is it that one's appetite is good? An occasional goose was shot, ducks, ptarmigan, an arctic hare; we always had enough, anyway, and one soon ceases to be particular as to exactly what kind of an animal it is which satisfies one's hunger.

We had the good luck to meet the Eskimo from the arctic coast on the Ark-e-leenik river, who resort to this river to obtain wood for their sleighs. These natives had never set eyes on a white man before, and had no articles of civilization whatever. They were all dressed in deer-skins, and armed with long bows, arrows, and spears, beaten out of native copper. The use of tobacco was quite unknown to them, and firearms they had only heard about. They gave me a good deal of information about their country and the copper deposits along the arctic coast, and I obtained from them several copper implements, such as dags, spear and arrow heads, needles, etc., which were all beaten out of native copper, giving them in exchange knives, files, and needles, which last appeared to have by far the most value in their eyes. They exhibited no signs of fear at our approach. They were a jovial lot, and

camped with us that night. In the evening they sang together, rather nicely, I thought. The next morning we parted, with many signs of friendship on their part.

On Clinton Colden lake, a very incorrect Dominion Government map in my possession was the cause of our going close on 100 miles out of our way. From Clinton Colden lake to Fond-du-lac on Great Slave lake, the geography of the country is well known, if not very accurately surveyed. On Artillery lake we struck the green spruce woods again about halfway down, and there we bade a final farewell to the Barren Northland, over which we had journeyed for well-nigh four months, and which had treated us so hospitably. The river flowing from the foot of Artillery lake into Great Slave lake is only passable for canoes the first 5 miles or so, beyond which distance the river descends torrent fashion through a deep precipitous chasm to Great Slave lake.

We had made several short portages on the unlucky day of the disastrous canoe accident, and already it was getting on for camping-time. In letting the canoe down a small side rapid by a bow-and-stern line, the stern line parted, and the tail of the canoe was quickly swung out into the current. In an instant it was caught by the rapids, and the bow line wrenched from the grasp of the man who held it. It all happened in a second. A cry of despair from one of my men, and we ran wildly down the river in the vain hope of the small craft being caught by some side eddy, and so brought close enough to the shore to get hold of. It shot the first rapid broadside on, even survived through the second without capsizing. A faint gleam of hope sprang up in my breast, but only for a second. A glance ahead down the river quickly dispelled any such hopes. The waters ahead, toward which the small canoe was being hurried, were all white, one broad expanse of seething foam, from which the tops of black rocks protruded in ominous fashion. The next time I lifted my eyes to look, the canoe was being tossed about, bottom up, amid one sea of foam, and the stuff, such of it as floated, was being swept away down to the rapids below in scattered directions. My heart sank; everything we possessed had disappeared—all gone! Rifles, guns, nets, axes, instruments, cameras, collections of geological and botanical specimens, note-books, and my precious photos, the result of a whole summer's work irretrievably lost! Even the canoe itself was soon lost sight of, and we were left with absolutely nothing but the clothes we stood in, still staring vacantly at the raging river which seemed to hold us with a certain fascination. My first impulse was to feel in my pockets for matches, and to my joy I discovered nine dry reliable wax matches, each one of which was good for a fire. This meant nine nights' fire, anyway. To cut a long story short, the canoe was eventually recovered, also a box, in which were my note-books and diaries containing the record of the journey, and a few other things. The loss of the geological and botanical collections.

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on which I had spent much time and trouble, I particularly regret;
the loss of an exceptionally interesting collection of photos I deplore.

By the loss of the rifles, guns, and nets, we were now without the
means of procuring food, and were in the middle of a very rough
country. Deer were plentiful, and stood stupidly staring at us within
easy range; fish were leaping in the pools on the river, but the means
of killing deer or taking fish were gone. Not an enviable situation in
which to find one's self, and a very disastrous finish-up to an otherwise
successful and most enjoyable journey. For six days we lived on what
cranberries and blueberries we could find. We then fell in with the
Yellow Knives, many of whom I knew. From them I obtained some
dried meat, sufficient to take us to Fort Resolution on Great Slave lake,
where we safely landed on September 25. At Resolution we heard all
about the Great Slave Lake Mining bubble, which had finally burst,
leaving many, I am afraid, richer in experience, if not in pocket. There
still being a chance of reaching Athabasca Landing by open water, I
availed myself of it, only remaining at Resolution a couple of days to
get some very necessary clothes and footgear. A fresh start for the
south was made on September 28, but we only reached as far as Red
River post, 35 miles north from Fort McMurray, when the ice stopped
us on October 17. The rest of the journey was accomplished with
dogs.

APPENDIX.

GEOLOGICAL DATA.

June 5.—Rocks at Eskimo camp, near Marble island, large outcrop of dark
green schists; fragments of white quartzite along the shore. North of this, for
some distance, no rocks *in situ*; fragmentary rocks scattered around were gneiss of
varied colour, mostly light grey, containing black and white mica in large quantities.
These specimens were smoothed and rounded, and have evidently been transported.

June 8.—Small island off the coast, about 5 miles south of the entrance to
Cape Inlet: rocks *in situ* grey gneiss, cut in different directions by veins of red
or flesh-coloured granite, dipping east at a low angle. Wag island, composed of
light grey gneiss and some darker coloured, containing hornblende horizontally
lying, well smoothed and grooved by glacial action; no striae observed, but the ice
moved over this part in a south-south-east direction; vegetation on island very scanty.

June 10.—Neck of land connecting Variety point with south shore of Cape
Inlet: similar gneiss, horizontally bedded, cut by veins of granite; smoothed and
grooved, but no striation. Hill to the south on mainland, similar formation; dip
almost vertical. On the top of hill, an extensive heap of loose, smooth, and
rounded boulders, and stones of gneiss (terminal moraine?).

June 12.—Large island in Cape Inlet, bearing west-south-west from Dangerous
point: gneiss associated with red granite; in places huge blocks upheaved and
thrown out of place by frost action; beds dipping west at an angle of 45°.
Point 80 miles west of Dangerous point; coarse-grained gneiss with granite; dipping
at angle of 40°. Other places in Cape Inlet have been noticed in Mr. Tyrrell's report.

June 26.—Arkok (a bay to the south of Bowell island): first signs of sandstone
(red) formation, fragmentary only; no rock *in situ*.

June 27.—West point of Bowell island, between south outlet of Baker lake and

Arkok : large outcrop of sandstone; conglomerate; very little sandstone pure. The conglomerate contains quartzite pebbles, some very large, very hard to break with an axe; dipping south-west at various angles. Fragments and large slabs, some with ripple-marks of pure red sandstone lying around, and shares composed of sandstone *débris*. No other formation *in situ*, but scattered fragments and small boulders of gneiss chiefly.

June 30.—South shore of Baker lake, opposite Maur-en-ik-nak. Exposures appear a short distance inland, in the form of large oval-shaped mounds, which cap the small hills rising from the undulating grass-covered flats. Specimen 4, obtained close to camp from rock *in situ*, a schist, apparently, though the rock has rather the character of a fine or medium grained thin-bedded gneiss, of a dark grey or greenish colour, breaking easily when struck with an axe, with a slaty cleavage; the rock is cut by veins of white quartz, and blotched with same; surface of rock smoothed and rounded; dipping west-north-west at an angle of 50° . Another specimen, also numbered 4, from further inland: a small exposure, surface of rock much disintegrated by frost; no sandstone *in situ*, but abundant evidence of this formation existing in the vicinity, from the number of rounded stones lying around everywhere; the small circular gravel terraces, as seen everywhere on the Barren Land, much in evidence; broad and extensive low ridges, generally flat-topped, on which are piles or groups of stones; small beds and banks, and lying around on gravel surfaces between the numerous large and small lakes are shells innumerable.

July 3.—Took specimens of shells, which here, head of Arkok, form the sub-soil, or, rather, a bed of these shells, from $1\frac{1}{2}$ to 2 feet thick, underlies the thin layer of soil, which supports a growth of moss and grass. This bed of shells extends continuously for over a mile from the shore, perhaps further. For 6 miles distant they were still to be seen at the edge of and between small lakes—in fact, everywhere where the ground was not covered by a growth of moss and grass. They were observed at a height of about 100 feet from the lake. (Specimens of these shells and a few rock specimens will be sent out from Churchill.)

July 5.—From head of Arkok, west-north-west along Baker lake: more extensive oval or mound-shaped exposures of similar rock, which now assume the character of ridges descending abruptly to the shore; land beyond flat, with low shores, covered with sandstone *débris*. Sixteen miles west-north-west from head of Arkok, at the mouth of a small river: exposure of red or reddish-brown sandstone in bed of river, extending for 80 yards north and south, and about 25 yards east and west; beds $1\frac{1}{2}$ to $2\frac{1}{2}$ feet thick, dipping west at an angle of 8° . This exposure is 6 feet below the east bank of the river, is smooth and striated, striae trending south. One mile further on, small mound or oval-shaped outcrop of red sandstone close to the shore, surface much affected by weather.

July 9.—Proceeding along south shore of Baker lake, numerous exposures of red sandstone along the shore. At 9 miles there is an extensive area about half a mile long by 250 yards wide, covered by a throw of smallish flat angular-shaped pieces of sandstone, which lie in the form of regular layers, or steps, as they slope towards the shore. Surely these parts could never have been swept over by fields of ice? A curious rocky exposure of red sandstone close by, the jagged surfaces of the beds projecting perpendicularly. Difficult to ascertain the dip, but the beds facing north are perpendicularly broken off. A short distance further on, sandstone beds dip south-west at an angle of 42° . Two miles inland mound-shaped sandstone hills; with the exception of these, land is dead flat, with numerous lakes scattered around.

July 11.—Along south shore of Baker lake to mouth of Kazan river: no rocks *in situ*; sandstone boulders and *débris* abundant.

July 12 and 14.—East side of mouth of Kazan river: no exposures; loose stone, t

le sandstone pure. very hard to break into large slabs, and shares composed of fragments and small

ik-nak. Exposures of mounds, which cap the flats. Specimen 4, though the rock has no cleavage, of a dark grey with a slaty cleavage; me; surface of rock 50°. Another specimen, surface of rock, ant evidence of this stones lying around where on the Barren generally flat-topped, on and lying around on the shells innumerable. Arkok, form the sub- underlies the thin This bed of shells further. For 6 miles small lakes—in fact, of moss and grass. lake. (Specimens of Churchill.)

aker lake: more ex- which now assume the beyond flat, with low north-west from head reddish-brown sand- and about 25 yards of 8°. This exposure striated, striae trending crop of red sandstone

merous exposures of

ive area about half a 2 miles. Just above the rapid, granitic formation again. Similar, although a flat angular-shaped varying slightly in character, to the rocks on King-ak portage. One outcrop or steps, as they slope appeared to be a granitoid gneiss. Extensive exposures on both sides of river. Dip of beds at one place north 25° W. at an angle of 40°. East end of Schultz lake, the jagged surfaces of granitoid gneiss; 10 miles up the lake on north side, and a short distance inland, the dip, but the beds exposure of very coarse-grained red or brown sandstone. On the top of these beds, once further on, sand- and also near by, re-tered some huge circular chunks of conglomerate, in which were inland mound-shaped embedded large quartzite pebbles, some of them the size of a man's head.

flat, with numerous

July 26.—Delayed by heavy head winds; took a walk back from camp, i.e. north-east. Rocks, conglomerate predominating, containing usual quartzite pebbles. Kazan river: no rocks A few exposures of red-brown, very coarse-grained, quartzitic sandstone.

July 31.—East end of Aberdeen lake. Rocks *in situ*; conglomerate and sand- no exposures; loose stone, thick and horizontally bedded. Proceeding along north shore as far as

boulders, gravel, dirt; shores sandy. Several miles to the south Kazan river cuts through a range of hills. Did not have opportunity of visiting them.

July 15.—West side of mouth of Kazan river: land extending from shore for 2 miles inland, dead, flat, and dotted with small lakes innumerable; then rising to a height which gives it the appearance of a long low ridge, as viewed from away east; sandstone beds here showing. Wherever sandstone formation exists, the land flat or slightly undulating, and grass-covered.

July 16.—Ascended rising land in form of a ridge, which lies to south-west of the mouth of Kazan river, which has an altitude of from 300 to 400 feet above the level of the lake. Exposure of sandstone on summit of ridge, which has the appearance of a rather altered rock. Dip difficult to determine; all that could be seen were small pieces of rock projecting perpendicularly. Surface of the main bed which showed was smoothed and rounded; terraces, semicircular or rim-shaped, at summit of ridge, composed of angular and irregular shaped fragments of sandstone, some of it differing from that *in situ*.

July 21.—On the portage between King-ak (which is a deep bay to the south of the mouth of river flowing from Schultz into Baker lake) and Koo-ook (which is the name of the river itself), which we struck 2 miles up from its mouth, we passed over several low ridges, all felspathic granite, cut by veins and associated with quartz; beds horizontally lying. Distance across portage, 5 miles.

July 22.—Travelled 14 miles up Koo-ook. Granitic formation; this granite in some places contain hornblende, in others it is of a felspathic character, the felspar occasionally being very much in the ascendant. Ridges, which run parallel to river on the south side and about one mile distant, all similar, cut by narrow veins, and associated with white quartz, occasionally in large quantities. Exposures numerous; beds mostly horizontally placed; smoothed and grooved. North-east side of river not examined, but more rocky than south-west side.

July 23.—Proceeding up Koo-ook. Scattered fragments along the shore, giving evidence of a new formation in the vicinity, which we struck after travelling 4 miles—a greenish or grey-coloured schist, having a very slaty cleavage. Large exposures along ridges south-west of the river; general dip of beds nearly vertical. A short distance further on, this rock is cut by a vein of white quartz 10 feet thick, and in many places by smaller veins. At 13 miles the river cuts through this rock to a depth of 80 feet; the rock on south side is deeply grooved by glacial action. A short distance inland, large slabs have been uplifted from the matrix by the action of frost, and are left sticking up, resembling large slabs of slate upended.

July 24.—Went on 7 miles up Koo-ook. Rocks similar schists, at one place dipping south-east at an angle of 60°.

July 25.—Reached the rapids near east end of Schultz lake after travelling 5 miles. Just above the rapid, granitic formation again. Similar, although a flat angular-shaped varying slightly in character, to the rocks on King-ak portage. One outcrop or steps, as they slope appeared to be a granitoid gneiss. Extensive exposures on both sides of river. Dip of beds at one place north 25° W. at an angle of 40°. East end of Schultz lake, the jagged surfaces of granitoid gneiss; 10 miles up the lake on north side, and a short distance inland, the dip, but the beds exposure of very coarse-grained red or brown sandstone. On the top of these beds, once further on, sand- and also near by, re-tered some huge circular chunks of conglomerate, in which were inland mound-shaped embedded large quartzite pebbles, some of them the size of a man's head.

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Kek-ek-tellig, white sandstone *débris*. (Kek-ek-tellig, by the way, is where the half a Doobaunt river enters Aberdeen lake.) cipitou

August 3.—Between Kek-ek-tellig and mouth of Doobaunt river. Boulders on the shore very varied, granitic predominating; also some of gneiss, greenstone, crumb very d angular quartzite, conglomerate, sandstone, etc. 42

August 5.—No rocks *in situ* until to-day at noon, when we were 33 miles up which the Ark-e-leenik (Phelew) river: outcrop of fine-grained, purply coloured sandstone, 12 mil dipping north 15° E. at an angle of 30° in bed of river; surface of rock much jagged the for and broken. It occurs on north-east side of river, and is of considerable extent: south of the high-cut banks, between which the river flows, are of sand and loam; outcrops of a fo of rock on hills some distance away to the south-east, probably sandstone. biolite

August 11.—No rock *in situ* until to-day. We have been passing through a with o very flat and occasionally undulating country, without not even a small hill in eviden sight. It is evidently sandstone all through. Red and white sandstone *débris* the riv scattered along both shores. Exposure of white sandstone, very thin and hori- again; zontally bedded, in the bed and on both sides of river, extending for about 20 in a co yards (this would be about 94 miles up the Ark-e-leenik river). Au

August 12.—Camp about 120 miles up the Ark-e-leenik, 2 miles above our through camp of last night. Horizontally and thick-bedded red sandstone, well shown in and ex precipitously cut bank on west side of river, and similar exposures were seen at white a dozen or more different places passed to-day. Some of these cut banks exposed rock on the sandstone beds to the depth of 50 feet; they occur on both sides of the river on the Stratification well shown in many of them. Near camp of last night, outcrop which on the top of a small longish, low hill, east of river, appeared white—probably junction white sandstone, but possibly limestone; small fragments of the latter noticed on place at the small circular terraces not far distant. Did not have an opportunity to visit white s the hill. Twelve miles up the river from camp, many large loose boulders piled side by up by the ice on east side of river; some of them beautiful specimens of granite out, ext others of gneiss; greenstone noticed. But the large majority of the boulders were a very of a kind of hardened shale, surfaces of which were a dullish white and resembled slaty c limestone on the outside; in form they were mostly angular, but the edges were gorge, l smoothed and rounded. point, 8

August 13.—Continuing up the river, we passed on the east side of the river at exposure of thin-bedded, horizontally placed red sandstone, deeply and distinct of river score 1, striae south-east; parts of the surfaces bore ripple-markings. Aug

August 16.—About 170 miles up the Ark-e-leenik river, approaching a range pathic hills of moderate height, which it entered through a short gorge after we had ed gran travelled 4 miles. An almost precipitous hill, about 600 feet in height, confine situ, bu the river on the left-hand side at this spot, the lower part of which is one confuse Aug some lit mass of large, loose white sandstone fragments, which have fallen and slipped from t thick above, where the rock is *in situ*, horizontally bedded. A spur or ridge from the outh (hill or peak extends up the river for some distance, and is of the same formation side of Character of country beyond gorge extremely sandy, the sand being beautiful brittle, white. About 7 miles beyond the gorge the Ark-e-leenik river divides, the large ed of branch cutting its way through thick beds of horizontally lying, red and white extent, chiefly white, sandstone, and flows off in a south-east direction, the smaller bran ed of which I followed, taking a south and changing course. I shall refer to this now horizont the west branch of the Ark-e-leenik. A hill lying to the west between the gorge his roc and the forks, a typically glaciated sandstone hill. the curi

August 17.—We now ascended the main Ark-e-leenik river for a distance Aug 182 miles. Proceeding up the western branch, white sandstone formation ver rocks an evident, river cutting its way through thick beds at several places. At 3 mil eologize from the forks a fall of 5 feet, white sandstone beds horizontally placed exposed

the way, is where the half a mile beyond, a fine fall of 30 feet; horizontal beds of white sandstone cut precipitously for a distance of 150 yards. Rock appears to be very soft, and easily crumbles; surface on east or north side of fall, near the edge, well smoothed and of gneiss, greenstone, very distinctly striated, striae S. 20° E.

August 18.—At last we come on a change from the everlasting sandstone, which formation continues the whole way up the Ark-e-leenik river. At about 12 miles the western branch cuts through a thick bed of gabbro (?), which extends in the form of a deepish gorge for 200 yards; this rock is very massive, beds dipping south at an angle of 60°. Rock varies in character, some of it having the appearance of a foliated rock on the outside. Quartz very much in the ascendant in some cases; biolite in others. In places the rock is largely composed of a flesh-coloured stuff, with only a thin layer of the matrix rock appearing. A dark green rock is much in evidence in many cases. Twenty feet or more of this formation is cut through by the river at this spot. Half a mile beyond, the confounded white sandstone appears again; I thought that we had seen the last of it. Huge chunks are piled around in a confused mass in a small gorge, the rock itself also being seen *in situ*.

August 19.—A very short distance beyond this small gorge, the river flows through a deep gorge 40 to 100 feet deep. At the commencement of this gorge, and extending for a distance of 500 yards, the beds cut through are now the familiar white and reddish sandstones containing quartzite pebbles, mostly small; same rock on both sides of the river. On the north-east side beds are thin and horizontal; on the south-west side beds are thick and falsely bedded. Beyond this sandstone, which extends up 500 yards, the formation changes; Laurentian gneiss appears. The junction of the two formations is not very distinct, for a small landslide has taken place at this spot, but the difference in the colour of the soil is very apparent; the white sandy soil of the sandstone and the reddish purple of the new formation lie side by side; the gneiss extends up the gorge for a mile, and above it again crops out, extending also up small side gulches which adjoin the river. This rock has a very distinct foliation on the outside, more so than when broken. Breaks with a slaty cleavage. It is much broken up, up-ended, and generally jumbled about in the gorge, but dips east at a very high angle, almost vertical. Width of river at this point, 860 feet. Loose rocks of gneiss scattered around for 2 miles beyond the gorge.

August 20.—Travelled 12 miles up the river. Gneiss crops out all along in bed of river and at several other places, varying in character in different places.

August 21.—Proceeded up river to small lake. Rocks here, red granite (fels-pathic); very rocky country. Took a long walk in afternoon; rocks all the same—red granite *in situ*, and scattered boulders and fragments. Gneiss does not appear *in situ*, but boulders and fragments of it, irregular, angular, and sharp-edged; plentiful.

August 22.—Fourteen and a half miles up river. Land very flat and sandy, some high sand hills and knolls in view. At 5 miles, beds of red granite are cut by a thick vein of white quartz, in which nothing is visible. Vein running north and south (true) in form of a small ridge 70 yards by 15 yards. This was on south side of river. One and a half mile further up, outcrop of dark grey rock; very brittle, and splits up into small sections when tapped with the axe. Outcrop in bed of a small stream, coming in from the south; exposure about 40 yards in extent, dipping S. 30° E. at an angle of 60°. At 12 miles river cuts through a bed of Laurentian or granitoid gneiss, mostly grey in colour, but some reddish; horizontally bedded, smoothed, but not striated. Noticed several small outcrops of this rock yesterday and this morning, but the chief formation is the red granite. The curious balanced stones observed to-day for the first time.

August 23.—Travelled 6 miles. Barren land here terribly rocky—miles of loose rocks and boulders; red granite and granitoid gneiss. But I had little time to geologize, for I had to hunt up the blessed river, which we had lost in a lake.

August 28.—Camp at small lake leading into Kasba lake. Small outcrop of mica schist; a smooth low rock, full of small water-holes, sloping gently to water's edge; other rocks same as before, chiefly granite.

August 29.—South side of the divide (a short distance east of Clinton Colden lake). Quartzitic grey granite, dipping south-east at an angle of 75° ; red granite also in evidence a short distance east. Last sight of Laurentian gneiss, but it may be present. Had but little time to look around, as I was busy portaging.

August 31.—Fine-grained basalt(?) diorite(?) obtained from a highish rocky island, north-east end of Clinton Colden lake, rock sloping south-east to water's edge, smoothed and striated, strike south-south-east; island 7 miles west from east end of lake.

September 1.—North-west end of Clinton Colden lake. Rocks, grey granite; great deal of it; country very rocky.

September 2.—Went up strait between Aylmer and Clinton Colden lakes; coarse grained biotite, quartzitic grey granite. Biotite occurs in small chunks, and the rock is very full of it in smaller pieces. Rocks much displaced, and a rough country. Some of the granite is red, in which felspar is very much in evidence.

September 3.—Along the south shore of Clinton Colden lake. Huge fragmentary rocks; where the rock is *in situ* it is smooth (waterworn) and slopes to the water's edge; no striation or grooves. The rock appears to have a certain foliation, and is associated with quartz in places; this rock, which I failed to classify, and the grey biotite granite are the distinctive rocks along the shore passed to-day. At two places the rock dips north at a high and low angle.

September 5.—Six miles south of narrows leading from Clinton Colden lake, similar rock to that on the King-ak portage (July 21)—pink feldspathic granite. Rock sloping to water's edge; no definite dip and no stria, but smoothed.

September 6.—River between Clinton Colden lake and Artillery lake, grey and feldspathic granite occurs along the banks. In places the country is of a very sand nature.

September 7.—Twenty-two miles south from head of Artillery lake, and on the west side. This rock (specimens have been lost, of course) occurs all along the west shore to our present camp, which is 36 miles from the head of the lake, the grey and feldspathic granite only occasionally appearing. I called it an altered limestone. There are large outcrops of it all along; quartz being much in evidence in vein pebbles, and small chunks. On the outside of the rock the quartz appears in queer shaped excrescences, which run along in the form of ridges, giving the rock a banded appearance. The matrix is brown on the outside, grey inside; very hard. Amethyst coloured quartz crystals in the form of hexagonal pyramids, also milk-white ditto were very common, and some beautiful specimens were taken. The rock itself reminded me of the boulders found on the Ark-e-leenik river (August 12). The boulders appeared to be composed of a hardened shale, and were a dullish white on the outside, and this rock has a brown appearance on the outside, but to the eye they appeared to be of the same composition. At the foot of the Artillery lake, at the outlet, there is a vein of discoloured quartz containing large quantities of iron. I have a specimen of this; the rocks were granitic again, and this was the last place where any notice was taken of the rocks, for our trouble then commenced.

Slave lake has by this time been fully reported on. Sandstone occurs on some of the islands near Fond-du-lac.

In the foregoing notes, on the days which are missed, it must be supposed that the formation of the previous day or days continued, or else that no rocks were met with. There were no fossils to be found in the sandstone, although I searched diligently for them at several places.

METEOROLOGICAL DATA.

	Bar.	Ther.		Bar.	Ther.						
	6 a.m.	6 p.m.	Min.	Max. in shade	6 a.m.	6 p.m.	Min.	Max. in shade			
SLAVE LAKE, 1898-9.											
lake. Small outcrop of											
sloping gently to water	30-10	30-08	11	—	Left Churchill.	12	29-70	29-68	—	Wind S., fine.	
	30-10	30-21	13	—	Cold and cloudy, wind N.W.	13	29-70	29-68	40	75	Wind S.S.W. Mouth of Kazan river.
	30-28	30-30	1	—	Wind N.	14	29-75	29-87	42	—	Wind N.N.W., rain in morning. Mouth of Kazan river.
e east of Clinto Colde	30-22	30-13	6	—	Warm day, wind W.	15	30-03	29-92	39	58	Wind N.N.W.
gle of 75°; red granite	30-04	30-10	16	—	Wind S.E.	16	29-88	29-85	42	72	Still at mouth of Kazan river.
ation gnei-s, but it ma	30-12	30-13	0	—	Wind S.	17	30-00	30-04	34	64	Wind N.W., fine.
asy portaging.	30-13	30-00	5	—	20 miles south of Eskimo point.	18	30-00	29-90	35	73	No wind, very hot.
from a highish rock	30-03	30-08	10	—	Cool and cloudy, wind S.	19	29-78	29-63	42	—	Wind E. Started west from Kazan river.
g south-east to water	30-13	30-11	15	—	Inland from Eskimo point.	20	29-58	29-62	42	—	Wind N.E., thick mist. West end Baker lake.
7 miles west from ea	29-48	29-89	27	—	Eskimo point 9. A blizzard.	21	29-72	29-76	—	64	Fine. West end of Baker lake.
	30-00	29-96	4	—	" gentle breeze N.W.	22	29-80	29-60	37	—	Wind W.
	29-81	29-73	18	—	" wind N.E., thick and snowing.	23	29-61	29-60	45	—	Rain in evening.
	29-78	29-86	18	—	" wind N.W., blowing and drifting.	24	29-70	29-41	38	—	Wind N.W.; rain last night.
	29-98	29-95	12	—	"	25	29-37	29-43	46	—	East end of Schultz lake.
Rocks, grey granite;	29-94	29-95	12	—	Left Eskimo point. Wind S.E., mild and cloudy.	26	29-47	29-30	30	—	Heavy rain-storm in morning from S.E.
	29-87	29-90	26	—	Wind S.E., dull and cloudy.	27	29-13	29-15	43	52	Wind W., light.
on Colden lakes; coarse	29-86	29-87	28	—	Wind N. and N.E., cool and cloudy.	28	29-30	29-13	33	58	Wind N.W. West end of Schultz lake.
all chunks, and the roc	29-88	29-95	35	—	Wind N.W., dull and cloudy.	29	29-18	29-12	34	51	Wind W.N.W. East end of Aberdeen lake.
, and a rough country	30-00	29-96	22	56	Wind N.W., thawing in afternoon.	30	29-15	29-16	35	59	Strong N.W. and W.N.W. winds the last few days.
a evidence.	30-04	30-08	22	65	Wind W., warm and sunny.	31	29-18	29-18	32	—	Strong W.N.W. On Aberdeen lake.
lake. Huge fragmentar	30-02	30-00	18	—	Wind N.W., bitterly cold. Term point.	1	29-20	29-30	29	54	Strong N.W.E. West end Aberdeen lake.
and slopes to the water	29-92	29-90	20	—	Wind S.E., fine. Left Term point.	2	29-45	29-36	38	56	Commenced ascent of Ark-e-leenik river (Thelew dereth of Back).
a certain foliation, an	29-89	29-92	24	—	Misty in morning, clear in afternoon.	3	29-30	29-33	43	—	Wind N.E., light; very fine.
illed to classify, and th	29-98	30-17	15	—	Wind S.E.E., warm and hazy on Marble island.	4	29-46	29-64	39	58	Wind S.E., light. Ascending Ark-e-leenik.
shore passed to-day. A	30-20	30-04	28	63	Wind S., fine and calm, snow fast melting.	5	29-70	29-72	27	—	Travelling west towards Great Slave lake.
Clint on Colden lake, sim	29-96	29-80	28	—	Wind S.W., Left Marble lake, arrived Baker's foreland.	6	29-73	29-65	44	—	Wind N.E.
elspathic granite. Roc	29-72	29-70	33	—	Wind N.W., gentle breeze; 16 miles south of inlet.	7	29-60	29-48	40	—	Wind N.E., showery.
smoothed.	29-67	29-65	33	—	Wind W., hot and bright. Wag island.	8	29-50	29-43	39	—	Fine.
Artillery lake, grey an	29-68	29-74	34	—	No wind, perfect day. Variety point.	9	29-44	29-43	47	63	Fine.
untry is of a very sand	29-68	29-63	24	73 (in sun)	Gentle S. breeze.	10	29-47	29-45	45	—	Fine.
Artillery lake, and on th	29-56	29-67	33	—	Wind S.W., dull and cloudy. Left Variety point.	11	29-43	29-36	41	53	Fine.
occurs all along the we	29-80	29-85	22	—	Near Langerous point.	12	29-30	29-23	37	—	Fine.
ad of the lake, the gre	29-78	29-62	28	—	Wind S.W., strong, fine day, south-west of dangerous point.	13	29-20	29-16	37	—	Fine.
at an altered limestone	29-50	29-53	24	58	Rain, heavy shower in afternoon.	14	29-21	29-20	37	—	Fine.
uch in evidence in vein	29-64	29-64	32	50	Wind W., dull; clear in evening.	15	29-23	28-98	36	—	Altitude 777 feet.
quartz appears in quee	29-64	29-72	30	56	Skiff of snow in morning, near North river, Cape Inlet.	16	28-93	28-87	48	—	Travelling west and ascending.
giving the rock a band	29-73	29-69	24	—	Wind W., fine near Stony point.	17	28-88	28-80	49	—	High wind, heavy rain.
de; very hard. Ambe	29-60	29-60	31	—	Wind S.W., fine, gentle breeze.	18	28-78	28-70	—	—	Rain in morning.
is, also milk-white diti	29-76	29-70	32	63	Wind N.W., fine. Near mouth of Quioch river.	19	28-82	28-08	40	—	Altitude 1364 feet. The divide.
taken. The rock itse	29-72	29-70	32	—	Variable light airs, fine. Bowell island.	20	28-66	28-76	32	—	Skiff of snow.
ver (August 12). The	29-82	30-04	38	—	Wind N.W.; rain last night.	21	28-80	28-67	28	—	Wind N.W.
were a dullish white	30-07	30-04	37	64	No wind, fine. Baker lake.	22	28-46	28-28	28	—	N.E. wind.
outside, but to the e	30-02	30-09	34	63	Wind S.E., strong. Baker lake.	23	28-30	28-17	24	—	Dull and showery in morning.
of the Artillery lake,	30-13	30-12	35	—	Wind S.E., gentle.	24	28-27	28-29	31	—	East end Clinton Colden lake.
ing large quantities	30-18	30-13	29	—	Wind S., strong; weather fine.	25	28-34	28-30	32	—	W.N.W. wind. Still on Clinton Colden lake.
again, and this was t	30-04	29-97	31	66	Wind S., moderate.	26	28-25	28-24	34	—	Travelling west on Clinton Colden lake.
our trouble then col	29-98	29-67	30	—	Wind N.W., strong, cloudy; still at east end of Baker lake.	27	28-20	28-12	29	—	Straight between Clinton Colden and Aylmer lakes.
	29-51	29-43	36	63	Wind N.W., strong.	28	28-19	28-36	31	—	Returning south and east on Clinton Colden lake.
	29-57	29-58	28	—	Wind N.W., dull and cloudy.	29	28-16	28-32	31	—	Wind N.W. East end of Clinton Colden lake.
andstone occurs on soc	29-60	29-62	36	59	Wind S.E., hot; sunny in morning, overcast in evening.	30	28-36	28-42	29	—	Between Clinton Colden and Artillery lakes.
	29-62	29-54	36	58	Wind N.W.; rain last night.	31	28-32	28-20	33	—	Altitude 1252 feet. On Artillery lake.
	29-63	29-73	36	53	Wind S.E., strong. Left east end Baker lake.	1	28-06	28-27	36	42	N.E. Moderate gale.
	29-88	29-90	37	65	Wind N.W.; heavy rain last night.	2	28-13	27-97	34	43	S.S.E. heavy wind.
it must be supposed th	29-96	29-78	38	72	Travelling west towards Kazan river.	3	28-56	28-38	35	47	Accident happened.
e that no rocks were n	29-67	29-70	42	62	Wind N.W.; heavy rain last night.	4	28-37	28-20	30	—	Thought we saw smoke. Went to look. Tried to swim; built raft and got canoe. Proceeded down river, which we shortly afterwards had to leave.
ne, although I search	29-67	29-61	33	—	Wind N.W.; heavy rain last night.	5	28-60	28-04	28	54	
	29-68	29-70	32	53	Travelling west towards Kazan river.	6	28-16	28-32	31	—	
	29-61	29-69	33	—	Wind S.S.W.	7	28-36	28-42	29	—	
	29-79	29-75	37	80		8	28-06	28-27	36	42	
						9	28-13	27-97	34	43	